

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LENNY LOW and JOHN LUONG

Appeal No. 2004-0536
Application No. 09/823,072

ON BRIEF

Before KIMLIN, WALTZ and TIMM, Administrative Patent Judges.
KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-6.
Claim 1 is illustrative:

1. Apparatus comprising:

a spacecraft having a body and north, south, east and west facing body panels;

one or more heat pipes disposed on each of the east and west facing body panels;

heat dissipating equipment selectively mounted on the heat pipes on the east and west facing panels; and

one or more coupling heat pipes that thermally interconnect the heat pipes on the east and west facing body panels together.

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The examiner relies upon the following references as
evidence of obviousness:

York	5,823,477	Oct. 20, 1998
Basuthakur et al. (Basuthakur)	6,003,817	Dec. 21, 1999
Hosick	6,073,887	Jun. 13, 2000
Doll (French Patent)	2,463,058	Mar. 27, 1981

Appellants' claimed invention is directed to a spacecraft having east and west facing body panels which, because of exposure to the sun, become excessively hot. In order to cool the east or west panel facing the sun, one or more heat pipes are used to thermally interconnect the east and west facing panels. In addition, heat dissipating equipment is mounted on the heat pipes.

Appealed claims 1-6 stand rejected under 35 U.S.C. § 103 as being unpatentable over Basuthakur or Hosick in view of York or Doll.

Appellants submit at page 4 of the principal brief that "it is respectfully submitted that Claims 1-6 stand or fall together." Accordingly, all the appealed claims stand or fall together with claim 1.

We have thoroughly reviewed each of appellants' arguments for patentability. However, we are in complete agreement with

the examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the examiner's rejection.

Basuthakur and Hosick, like appellants, disclose a spacecraft having east and west facing body panels, as well as the use of heat pipes to withdraw heat from the panels when they are exposed to the sun. The heat pipes of Basuthakur are coupled to the panels and "a point within or on a surface of satellite body **32** which has special thermal stability requirements" (column 5, lines 49-50). Basuthakur does not specifically disclose coupling the east and west facing panels with the heat pipes. Hosick, however, like appellants, expressly teaches implementing a heat transferring means, such as heat pipes 40, between the east and west facing panels 28 and 30 for the purpose of minimizing temperature variations on the panels during exposure to direct sunlight (see column 4, lines 55 et seq. and column 6, lines 5 et. seq.). Accordingly, based on the prior art disclosures, we are convinced that the examiner properly concluded that it would have been obvious for one of ordinary skill in the art to dispose one or more heat pipes on the east

and west facing body panels of a spacecraft and thermally interconnect them with coupling heat pipes.

Neither Basuthakur nor Hosick discloses the presently claimed heat dissipating equipment mounted on the heat pipes disposed on the east and west facing panels. Hosick mounts the heat dissipating equipment on the panels rather than the heat pipes (see column 4, lines 55 et seq.). However, York evidences that it was known in the art to mount heat dissipating equipment, such as amplifier 36 and filter 40, on heat pipes.¹ Accordingly, we find that it would have been obvious for one of ordinary skill in the art to mount the heat dissipating equipment of Hosick on either the east and west facing panels or the heat pipes mounted on the panels. We note that appellants have advanced no argument why it would have been nonobvious for one of ordinary skill in the art to mount the heat dissipating equipment of Hosick on the heat pipes. Furthermore, appellants base no argument upon objective evidence of nonobviousness, such as unexpected results, which rebuts the prima facie case of obviousness established by the applied prior art.

In conclusion, based on the foregoing, the examiner's decision rejecting the appealed claims is affirmed.

¹ A discussion of Doll is unnecessary to our decision.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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THOMAS A. WALTZ)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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CATHERINE TIMM)	
Administrative Patent Judge)	

ECK:clm

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